

한국인 원발성 사구체신염 환자의 IL-18, TGF- β VEGF 유전자 다형성

경북대학교 의학전문대학원 내과학교실, 말기신부전 임상연구센터¹, CHA 의과대학교 내과학교실²

최혁준² · 김준철² · 서혜진¹ · 현승혜¹ · 김건현¹ · 최지영¹
최희정¹ · 류혜명¹ · 조지형¹ · 박선희¹ · 김용림¹ · 김찬덕¹

Gene Polymorphisms of Interleukin-18 (IL-18), Transforming Growth Factor- β (TGF- β) and Vascular Endothelial Growth Factor (VEGF) in Korean Patients with Primary Glomerulonephritis

Hyuk-Joon Choi², Jun-Chul Kim², Hye-Jin Seo¹, Seung-Hyea Hyun¹, Gun-Hyun Kim¹,
Ji-Young Choi¹, Hee-Jeong Choi¹, Hye-Myung Ryu¹, Ji-Hyung Cho¹
Sun-Hee Park¹, Yong-Lim Kim¹, Chan-Duck Kim¹

Department of Internal Medicine & CRC for ESRD¹ in Korea Kyungpook National University School of Medicine
Department of Internal Medicine² CHA University School of Medicine

Background : Immunologic mechanisms with various interrelated cytokines underlie the pathogenesis of glomerulonephritis (GN). Many studies have demonstrated the effects of gene polymorphisms on the development of GN. This study was attempted to investigate the effects of gene polymorphisms on the development of GN by analyzing gene polymorphisms of interleukin (IL)-18, transforming growth factor (TGF)- β and vascular endothelial growth factor (VEGF) in Korean patients with primary GN.

Methods : This study included 146 normal subjects (Control group) and 78 patients (GN group) who were diagnosed with primary GN by kidney biopsy at Kyungpook National University Hospital between October 2004 and July 2006. Gene polymorphisms of IL-18 (-607A/C, -137G/C), TGF- β (-509C/T, 869T/C) and VEGF (-2578 C/A, 405C/G) were investigated with DNA extracted from peripheral blood.

Results : Significant differences in genotype frequency and allele frequency between the GN and control group were observed in the analysis of IL-18 A-607C and VEGF C405G. The frequency of the IL-18 -607CC genotype was significantly increased in the GN group ($p=0.006$, odds ratio=2.319), and the frequency of the VEGF 405GG genotype was significantly increased in the GN group ($p=0.003$, odds ratio=2.447). No significant differences were observed in the genotype distributions of cytokine gene polymorphisms in the GN group with and without proteinuria of 1.0 g/day or more. And, no significant differences were observed in the genotype distributions of these polymorphisms in the GN group with and without GFR of 60 ml/min or more. Linkage disequilibrium coefficients between polymorphisms indicated that investigated polymorphisms of IL-18 ($D=0.90$) were in tight linkage. AG haplotype was significantly lower in the GN group than in the control group (29.5% vs. 39.4%, $p=0.023$), whereas CG haplotype was significantly higher in the GN group than in the control group (60.3% vs. 46.9%, $p=0.003$).

Conclusion : The results of this study suggest that gene polymorphisms of IL-18 and VEGF may be related to the susceptibility and development of primary GN. Further studies with a larger sample size are needed to confirm our results.

Key Words : 사구체신염, 유전자다형성, IL-18, TGF- β , VEGF
Glomerulonephritis, Polymorphism, IL-18, TGF- β , VEGF